December 6, 1955

Dean John Z. Bowers
College of Medicine

Dear John:

Kim (Dr. Atwood) had asked me to send him a copy of the "Genetics and the Medical School", which I had left with you before. But on re-reading it, it seemed to be a rather weak expression of my own views probably as it was composed for another context. At Wisconsin, it hardly seems necessary to insist on the desirability of a genetics program. I therefore thought I would make some more explicit comments to send to Kim and yourself. From the tenor of our conversation, I suspect that we are really in remarkable agreement about the principles— as I may have told you, Dr. Morton who was preparing for a specialization in human statistical genetics has adopted a rather similar conclusion and is planning to spend his second fellowship year in microbial, rather than mathematical, genetic studies as a prelude to a career in medical genetics.

I am enclosing a brief memorandum to embody what are, needless to say, my own personal views. I assume that Kim will be in further correspondence with you; you can make whatever use of these memos that you care to between yourselves. I am also enclosing some additional copies of the syllabus proposal for the short course.

Yours sincerely,

Joshua Lederberg
Professor of Genetics

CC: KCA

Medical Genetics

Memorandum to Dean Bowers
From: Prof. Lederberg
December 6, 1955

1. Functions: in likely order of importance
   A. Collaboration and consultation with colleagues.
   B. Instruction of medical and graduate students.
   C. Research program.

2. Qualifications for leadership in medical genetics
   A. Most important: solid training in genetics, with broad perspective on its special fields: clinical, statistical, physiological; microbial.... (This is by far the most important qualification, and already goes a long way to limit the field.)
   B. Sufficient medical interest and background to be able to communicate effectively with the staff-- in fact to inculcate an interest and appreciation of the neglected opportunities for genetic insight in a variety of medical problems. Needless to say, this qualification also carries certain personality requirements, and is also connected with
   C. Ability to teach (communicate with) medical students in the same terms,
   D. Ability to attract the interest of geneticists in other departments for collaborative assistance in his functions.
   E. Interest and qualifications for a research program in an area consistent with the aims of the medical school.
   F. For leadership in what amounts to a new activity (whether as a separate department or not), administrative commonsense and perspective on the bearing of his own program on the general educational and research development of the college and the university. This would require both tact and vigor in catalyzing the growth of this activity.

3. Comment on special qualifications. Medical genetics has been considered synonymo with human genetics. However, medicine is concerned with microbial parasites as well as their human hosts. More important, despite the particul virtues of human populations, they are not amenable to controlled experiment, and much important basic knowledge has to be extracted from studie with smaller mammals, bacteria, and even traditional materials such as Drosophila and maize. It is also a question whether human genetics repre sents a career discipline in itself-- in practise, the daily activities of a "human geneticist" are likely to consist of statistical analysis of data collected by others, or of intensive work in internal medicine, radiology, dermatology etc., or in biochemistry, serology or the like. While it would be valuable to find someone, if available, who was both a clini and a fully competent geneticist, such persons are vanishingly rare, and furthermore too close a specialization on human genetics would probably lead to a neglect of other aspects of medical importance. On this argume it is less important to ask whether a candidate was an anatomist or a microbiologist than to insist that he have the broadest possible perspec of genetics as a whole. Specialists in the subdisciplines of geneticists should be considered for later growth of the division.

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4. Organization. This is the aspect with which I am least acquainted (and for the present purposes, the least concerned. However, it is an important element in the discussions pending with another medical school. I do not think Kim has given much consideration to this either, and I don't know his views, which he will doubtless expound.) Three alternatives present themselves: There are many pros and cons.

/A. No organizational changes; informal collaboration with other colleges.
/B. Subdivision in an existing department (Medicine? Microbiology? Oncology?)
/C. Formation of a new "department" or comparable unit.

A. The chief disadvantage is that genetics will not be able to make so adequate an impression without someone in residence at the medical school. There will be simple physical obstacles in the way of research collaboration and supervision of students. When routinized, this kind of arrangement is bound to lead to depreciation of interest. [Speaking for myself, I would be happy to help in this fashion, but on a short term basis].

B & C. share the advantage of resident work and teaching in genetics, and the opportunity of appointing a professor uniquely qualified for the job. B might be easier to sell to the existing faculty, and would relieve the appointee of the administrative burdens of chairmanship. The chief danger is again that tying the tail to a large dog may narrow the interest in and immediate development of the activity. However, the plan B would be acceptable in a department whose leading professors and current chairman were especially interested themselves in the growth of medical genetics; otherwise, it might wither on the vine.

The advantages of C are the greater likelihood of attracting the best candidate in view of the encouragement to autonomous growth, and probably more effective means of cooperating with geneticists outside the medical school (e.g., as an illustrative possibility, I could visualize myself as a joint tenant in a department of Medical Genetics more readily than in the department of Medicine). On the other hand, C would impose the burdens of chairing duties (how strenuous would they be in a "one-man-department"?) and perhaps add to the cumbersomeness of college administration. Administrative ingenuity should be equal to the task posed here, but there must be issues I have not touched upon.

P.S. It was hard for me to write Section 2 above without having Kim specifically in mind— I wish I could think of any one who could fill the bills so well, as that would help to sharpen my critique, but I just don't know where you'll find him. Unfortunately, most of the people who have been attracted to human genetics have become such narrow specialists that it's hard to talk to them in any other context, which would be dangerous here. Jim Neel who has been doing a wonderful job at building up human genetics at Michigan illustrates the point— he has practically no interest (or familiarity) in, say, microbial genetics or radiobiology, and he is doubtless the tops of his own species.